IT AWARDS
Nomination Form

APPLICANT INFORMATION	
Name of Project, Application, Initiative, etc.	Efficient Asset Management System
School	University of the Cumberlands
Individual Nominating	Donnie Grimes
Award for Nomination (please circle one)	Best New Campus Application Best Student Online Service Most Successful IT Infrastructure Project Most Innovative Use of Technology for Instructional Purposes

| NOMINEE DESCRIPTION | Given the size of the campus at the University of the Cumberlands, the Information Technology department is required to manage thousands of computer systems and associated peripherals.   Managing these assets effectively and efficiently has previously been a very challenging responsibility.   In addition, it is not uncommon for the I.T. department to be tasked with receiving hundreds of new computer systems. Each of these new systems must be inventoried, prepared with a custom OS installation, added to the University's network domain, installed physically, and have backups restored for each user's files.   Furthermore, keeping all of these computer systems updated with the latest critical updates, security patches, and anti-virus definitions is a whole other challenge in itself.

The solution to streamline the above process and greatly enhance efficiency was the implementation of a new application we call the Efficient Asset Management System (EAMS). This system is composed of a web-based inventory tracking system developed in-house with PHP and MySQL, a computer imaging solution that allows the installation of a custom OS install on multiple computers simultaneously over the network (using PXE), and a server that automates the process of pushing out Windows updates and the latest anti-virus definitions by taking full advantage of Windows Server Update Services (WSUS) and Microsoft Forefront Security.

The inventory system allows us to track every asset in detail. We assign our own inventory number using pre-printed labels and input the service tag of the computer, which pulls in all of the specs of the machine automatically. We also track important information such as the installed location, user information, and machine name. This incredibly simplifies future maintenance and tracking, as we know where every machine on campus is located (as well as the details for that machine). The power in this from a maintenance standpoint is that we can grab a machine name with a simple web-based search, and proceed to connect remotely or assign updates with our update server.

The computer imaging solution that we have customized for our specific purposes allows us to create a single custom operating system installation on one machine and then save that image to the server. We can then simply allow each machine to boot to the Network Interface Card (NIC) using the Pre-boot Execution Environment (PXE). Through this method, a connection is made to the imaging server and the custom OS is installed automatically.

With the EAMS application, we were able to reduce a process that previously required two to three hours of manual attention per machine to a nearly fully automated process that requires only a few minutes per machine. |
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| JUSTIFICATION FOR AWARD | Previously, the University had several diverse systems to provide for asset control. When a new computer would arrive from a manufacturer, the I.T. staff would perform a series of steps before it was placed in production. The first was recording the system into our custom written inventory application. The second step involved re-installing Windows and all needed application and antivirus software. Finally, the computer was placed on our domain and placed into the appropriate organizational unit. This was laborious process that would typically take several hours per computer. Additionally, when a computer needed to be re-imaged, the user would be without a computer for up to a day.

The new system is mashup of several components integrated be an administrative application written by the University's staff. The system includes: a custom written management system, a custom written inventory system, the FOG open source computer imaging system, and Microsoft Windows Server Update Services (WSUS). This is an example of how the system works:

1. A new computer arrives.
2. The computer is PXE booted into FOG.
3. FOG inventories the computer into our asset tracking system.
4. FOG reimages the computer.
5. In the management system, the computer is placed in a particular a organizational unit on the network.
6. WSUS automatically installs the appropriate antivirus software.

From start to finish, the new process takes less than 15 minutes to complete. In the spring semester, this system allowed the I.T. department to distribute 80 new computers in two days. Previously, this would have taken weeks to complete. Additionally, when a computer needs to be reimaged, it can now be performed remotely in less than 10 minutes.

When a problem is reported for a computer, it is recorded to computer's history. This history provides valuable artifacts of user behavior as well as problems with specific models of computers. It is our belief that over time we will be able to use this information to proactively perform maintenance to prevent service disruption. |
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| BENEFITS | The benefits of this project include:

- The ability to completely image a new machine remotely including operating system, applications and domain rights in less than 15 minutes.
- The ability to schedule the image process to occur in advance for off peak times.
- The ability to keep a central inventory and track problems with the equipment.
- The ability to uncover trends with specific models of equipment. |

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	• To create replacement schedules for equipment. • Leverages a combination of open source, closed source, and custom application to create a mashup of diverse systems to deliver a complete asset management system.
ADDITIONAL COMMENTS	

Activities relating to the applicant nomination should have occurred during the last 12 months.
You may use additional paper if needed.
Thank you so much for your time and consideration.
The nomination forms can be submitted electronically to me or via mail to the AIKCU office.
All submissions are due by COB August 15.